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(54) Title: METHODS AND COMPOSITIONS FOR CONVERTING TAXANE AMIDES TO PACLITAXEL OR OTHER TAX-**ANES**

(57) Abstract: The invention relates to methods and compositions for converting taxane amides to paclitaxel or other taxanes. In one alternative embodiment, the present invention comprises; (i) selectively protecting at least one OH group of a taxane amide; (ii) contacting the taxane amide with a transition metal compound to reduce the amide; (iii) contacting the reduced amide with an agent capable of substantially removing the transition metal; (iv) contacting the reduced amide with a hydrolyzing amount of acid to form a taxane amine salt in solution; (v) adding a sufficient amount of solvent to solidify the amine salt; and (vi) converting the taxane amine salt into paclitaxel or other taxanes.

INTERNATIONAL SEARCH REPORT

ational application No.

PCT/US03/24666

| A Comment fairing as difficulties are listed in the continuation of Box C. * Special extegeries of disconnect, with indication, where appropriate, of the relevant passages **Peter documents are listed in the continuation of Box C. * Special extegeries of disconnects with indication, where appropriate, of the relevant passages **Relevant to claim No. Purther documents are listed in the continuation of Box C. Special extegeries of disconnects with indication, where appropriate, of the relevant passages Relevant to claim No. 112, 62-70, 101-109 Purther documents are listed in the continuation of Box C. Special extegeries of disconnects with indication of Box C. See patent family annex. Special extegeries of disconnects with indication of Box C. See patent family annex. Special extegeries of disconnects with the application by the invention of Box C. Special extegeries of disconnects with the application by the invention of Box C. See patent family annex. Issue to comment published dirth the template and the continuation of Box C. See patent family annex. Issue to comment families and the published on or shere the international filing date or private and not in called with the application by the invention cannot be considered to be of particular nelevancy to decide the continuation of the particular nelevancy to decide the continuation of particular indication of the particular nelevancy to decide the continuation of particular indicates the particular nelevancy to decide the continuation of particular indicates the particular pa | A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : C07D 305/14, 493/00 | | | | | | |
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| Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230 Authorized officer Taofiq A. Solola Telephone No. (703) 308-1235 | • | | Date of mailing of the international search report 21 APR 2004 | | | | |
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/24666

| Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet) | | | | | |
|---|--|--|--|--|--|
| This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons: | | | | | |
| Claim Nos.: because they relate to subject matter not required to be searched by this Authority, namely: | | | | | |
| 2. Claim Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically: | | | | | |
| 3. Claim Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a). | | | | | |
| Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet) | | | | | |
| This International Searching Authority found multiple inventions in this international application, as follows: Please See Continuation Sheet | | | | | |
| 1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims. 2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee. 3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.: | | | | | |
| 4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-12, 62-70, 101-109 Remark on Protest The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees. | | | | | |





BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions, which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-12, 62-70, 101-109, drawn to compounds.

Group II, claim(s) 13-33, drawn to a process of taxane salt from taxane imine.

Group III, claim(s) 34-61, 71-78, drawn to a process of making taxane mixture from taxane amide and transition metal.

Group IV, claim(s) 79, drawn to a process of making taxane imine from taxane amide.

Group V, claim(s) 80-100, drawn to a 2nd process of making taxane salt from taxane imine.

Group VI, claim(s) 110-112, drawn to a 2nd process of making taxane imine from taxane amide.

The inventions listed as Groups II-VI do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the inventions are drawn to different processes of making the same or different products. Therefore, under PCT Rule 13.1 and 13.2, they lack the same or corresponding special technical features.

The inventions listed as Groups I and II-VI do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the invention of group I is drawn to compounds while the inventions of groups II-VI are drawn to different processes of making compounds different from the compounds of group I. Therefore, under PCT Rule 13.1 and 13.2, they lack the same or corresponding special technical features.